Notes from the 9/13/05 MI BPM Upgrade Meeting
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These notes can be found in Beams docDB #1526.

Agenda as announced:

Project Announcements : Bob and Steve
MI BPM requirements/MI issues : Dave and Alberto
Combiner Board status : Bob Forster, Vince
VME crate purchase status : Bob Forster
MI BPM signals to FCC3 : All done, I think!
MVME processor status (memory requirements) : Luciano Margaret,Steve
Transition Board status : Manfred
Timing Board : Bill
MI30 status : Peter,Bob Webber
Service Building survey/BLM coordination : Tim, Marv
Front-end software : Luciano
Online software : Brian
Validation: Rob Kutschke
AOB

0. Announcements - Bob and Steve

- No update yet on the shutdown date. We talked about large aperture quad installation and other shutdown related jobs. In any case we will work around the shutdown and will proceed as quickly as possible to design, install and commission the upgraded BPM system.

1. Requirements update - Alberto and Dave

- Margaret modified the draft to clarify and rearrange some of the text in the Data Acquisition section. These look acceptable and will be merged into the next version.

- Bob Webber asked questions and requested clarifications. These have been captured by Alberto and he and Dave will address them in the next version of the document. Some of the issues drifted a little bit into implementation but nevertheless are extremely important for us to understand how we are going to build the system and how it might work in detail.

- Some of these issues will be addressed either in a special presentation by Dave and/or in more focussed meetings to discuss how the system is expected to perform under many different conditions. A specific issue that led to much discussion is the buffer(0) or zero(0) compatibility buffer. The exact behavior of this buffer needs to be

carefully defined so that it gives expected results in all cases (or if not that we can live with it).

- In any case Dave and Alberto will fold in the changes and update the document as necessary. It will be good to keep the document up-to-date as possible as it forms a common base to discuss and for use to design and implement the final system.

2. Combiner Board status : Bob Forster, Vince

- There was a problem with the vendor delivering all of the completed combiner boards on time. Some number of components were lost or in some other way made unusable during assembly.

- 101 boards have been shipped and are on the way. There are plans to check these boards, mount some fraction of them in housings and start preparations for installing them in the MI.

- Marv will work with Dave, Tim and others to get the work request and necessary coordination for installation of the boards in MI. Access time is fairly rare and we should take opportunities when we can get them.

3. VME crate purchase status : Vince/Bob

- In purchasing awaiting bids, as far as we know.

4. MI BPM signals to FCC3 : Bakul, others.

- All signals were enabled by Greg Vogel last week. Good work! So the test stand in FCC3 should have all the signals it needs. This does need to be verified.

5. MVME processor status : Luciano, Margaret, Steve

- Luciano gave a nice talk describing the memory required in the front-end based on various assumptions about static and dynamic buffer allocation, average number of flash buffers, etc. It seems likely that 512 MB of memory will be sufficient. Luciano's talk can be found in docDB #1955.

- Independent of the memory requirements investigations continue on the ability of the MVME 5500 to be used for the project. MOOC has been ported. There are still a few changes necessary to make the board work for the MI BPM project.

- The project would like to use the 5500. It is a newer board and so is likely to be supported longer. The board is used at CDF, D0 and the Sky Survey and CD and the lab have experience with it. It is a faster board and that should help us. The memory can be expanded to 1 GByte if necessary. There is a Gigabit ethernet capability.

6. Transition Board status : Manfred

- A document showing the results of all of the tests for the transition board will be added to docDB.

- The results shown are all encouraging. A complete 2-channel analog board was assembled and both the 2.5 MHz and 53 MHz were tested. The differential gain looks very good (important that the two channels are very closely matched). Also isolation, return loss, transmission all look fine.

- The design of the full 8 channel board + digitial control is proceeding using the knowledge gained from this first prototype. Manfred will discuss with AD staff a schedule for layout.

7.&8. MI30 status/Timing Board : Peter/Bob W./Bill

- A document (docDB #1956) describes some work that was done to validate the capability (or not) of Bill Haynes' timing board using 10/7*RF as well as 10/7*RF Echotek timing card and 7/5*RF Echotek timing card. All of these were found to be successful in providing closed orbit measurements. However, many problems with the system were found while making the measurements.

- Firmware work continues on the timing board. The layout is complete. Some additional checkout is proceeding. The board should be headed into production as soon as we are confident that it can function as required for the project. In addition to the board there are two transition cards required - one on the rear for the I/O to the transition board crate and one on the front to fan-out the SYNC to the Echotek.

9. Front-end software : Luciano

- Still working on the readout/VME driver, etc. Will feed back any changes or problems to Charlie.

12. AOB

- We ran out of time! Obviously there is much going on and we will pick up the remaining reports next week at the normal time.